

## Possibility of Urban Development along Newly Constructed Suburban Railway in Bangkok

### Nihon University

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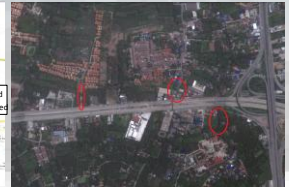


## Background

Several new railways such as Purple line will connect Bangkok's outskirts with city center. It is expected to help to reduce traffic congestion in BMA.

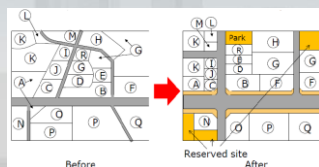
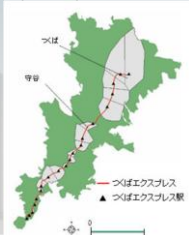
However access to station is very poor so that impact will be quite limited.

Thus, urban development which will provide access to the station is essential at the area along new lines.



## Suburban Railway Development and Land Readjustment project in Japan

In Japan, most of areas along suburban railway developed by applying the Land Readjustment project and basic infrastructures such as access roads and public spaces has been developed.



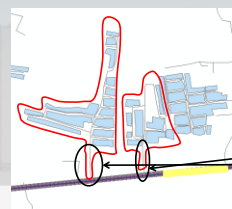
Source: Mechanism of Area Development along railway in Japan  
By Prof.Dr.Atsushi FUKUDA



## Land Subdivision project based on land subdivision law

### Land Subdivision project outline

- Land Subdivision is a development permit issue from the Ministry of Interior Department of Land to the private housing development projects.
- Housing lot of Land Subdivision project is, the house units grouped together inside a wall that isolate the project from outside.



Land Subdivision law	
classification	Development Permit
jurisdiction	Ministry of Interior, Department of Land
purpose	Examination of private developers to develop appropriate guidance
object	Private land development company
① Development control	
• Does the content of development fill a standard?	
• developer accomplishment, construction ability and the progress	
② Standard for road width	
• The road sections used to go in and out from each piece of land to the main road should be 4 meters or more in width	
• The road in the business district should have the width of the road and the carriageway width provided for according to the number of divisions.	



## Objectives of this Study

Many of residential development at the areas along most of new railway have been carried out by land subdivision development in BMR.

Since Land Readjustment Law in Thailand was enacted in 2004, there is possibility to apply land readjustment project at the area along new railway line like Japan and provide good accessibility.

The aim of this study is to exam the possibility to apply land readjustment project at the area along Purple line based on interview survey with residents.



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## Current situation of urban development along railway in Bangkok's outskirt

- The road and the residential areas, etc. are enumerated from the satellite images.
- GIS is used to observe road network, land use and current area condition.
- Road ratio, station access, number of residential development areas



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## Current situation of urban development along railway in Bangkok's outskirt

- The road ratio is very low in the area except in land subdivision projects.
- The improvement of urban infrastructure by using **Land readjustment** is necessary.
- To successfully execute the project, it is necessary to understand the residents' attitude toward **Land readjustment** project.

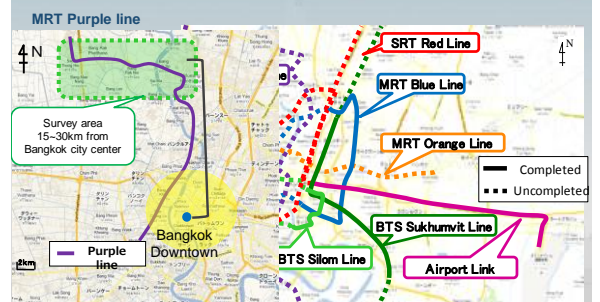
Land area & subdivision land ratio(%)			Road ratio(%)			Access road (lines)		
Station sphere of influence 500m	Station sphere of influence 1km	Average	Sub division	Area other than Subdivision	Average	Direct connection to station	Station sphere of influence 500m	Station sphere of influence 1km
70.6	71.4	71	28.7	7.11	11.4	2.2	5.7	10.4

Land ratio, road ratio and access roads of areas along MRT Purple line



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## Bangkok suburban railway development plan

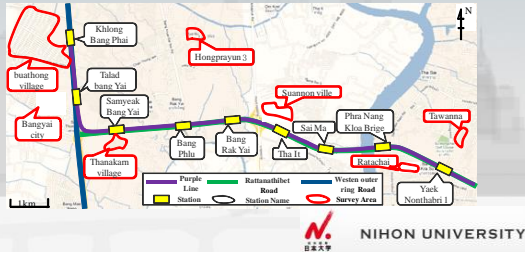


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## Field Survey

### Interview Survey

- 4<sup>th</sup>-6<sup>th</sup> November 2010
- Conducted on 300 residents in 7 residential areas located along MRT Purple line
- These residential areas are land subdivision projects isolated from the main road



## Field Survey

### Survey procedure

- 1<sup>st</sup> - Introduction of the Land readjustment project
- 2<sup>nd</sup> - Decision making survey of the Land readjustment project

Main Topics	Sub Topics
Using the MRT Purple Line	<ul style="list-style-type: none"> <li>• Nearest station (transport mode, travel time)</li> <li>• Work place (office location, transport mode, travel time)</li> <li>• Use or not use the Purple line (reasons)</li> </ul>
Knowledge about Land readjustment	—
Attitude toward Land readjustment project	• Reasons, supporting reasons
Participate or not participate in Land readjustment project	• Reasons, decision factors

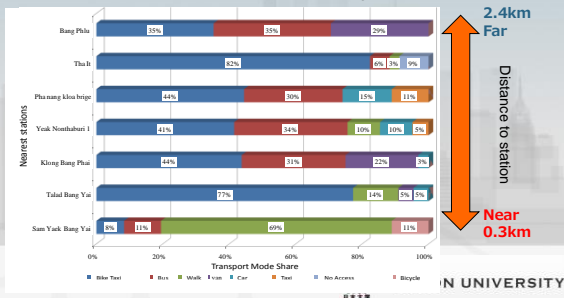
Interview topics

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## Result of Survey

### Transport mode use to nearest station

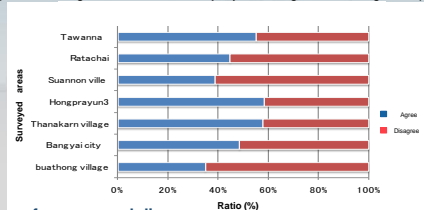
Bike taxi and Bus are the most popular transit mode to go to MRT Purple line stations



## Result of Survey

### Attitude toward land readjustment project (agree or disagree)

- Around 50% of the residents support and agree toward the project
- The person who agreed exceeded the majority according to the investigation spots



### Reasons for agree and disagree

- There are a lot of people who agreed to participate in the project as a contribution to society
- A detailed explanation about the benefits of the Land readjustment is necessary to convince disagreed residents to join the project

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## Consideration of current situation from Survey

- Para-transit and bus become the preferred transportation mode to go the nearest station. The development of the station square becomes essential to provide space for these feeder transports.
- Most of residential areas are far from the stations and the access roads that residents are using to get to the stations are not being use efficiently.
- The road development ratio such as the access roads to the station is very low, and there is a big difference at the road ratio of the subdivision project areas and other areas.

## Urban development method focus on Railway

### Areas along MRT Purple line after Land readjustment is done with GIS

- The increase of the road ratio and number of access roads can be expected by improving urban infrastructure.

		Bang Rak Yai		Bang Phul	
		Influence sphere 1km	Influence sphere 500m	Influence sphere 1km	Influence sphere 500m
Road ratio (%)		Before	After	Before	After
		5.4%	14.5%	9.0%	20.1%
Access Road (lines)	Direct connection to Station	1	9	2	8
	Influence sphere 500m	5 (4)	20 (11)	4 (2)	20(12)
	Influence sphere 1km	6 (5)	30(10)	9 (5)	39(19)
	Pedestrians exclusive use	—	4	—	4

## Conclusion

- There is some distance between stations and residential areas and the roads that connected them cannot be use efficiently. Therefore, it is necessary to improve the access to the stations and make use of station's surrounding areas for infrastructure improvements.
- By investigating the residents' access to the stations, the free space to be use as pick-up and drop-off point is necessary.
- Realized by this study, urban planning of BMA from now on should focus on finding an ideal regulation to deal with an unorganized and loosen land use method of private companies and private land developers while continue to focusing on railway development as the main consideration

## Final suggestions

- The Land readjustment rule must be adjust to be more suitable for Thailand case where people are more attract to monetary factors such as profits and increase in land value.
- Instead of buying out all existing property owners or using eminent domain, the land readjustment agency could invites land owners to become stakeholders and to contribute their real assets to the project as investment capital.
- . By making land owners become a part of the investment and improving properties' infrastructures in the same process, the total benefits received by participating in Land readjustment project can encourage land owners to voluntary join the project.



**THANK YOU VERY MUCH  
FOR YOUR ANTICIPATION**